

CLAIMS

1. An encoding system for encoding input video data, characterized by comprising:

encoding means for encoding said input video data to generate an elementary stream and describing, in said elementary stream, information about the picture order of said elementary stream; and

generation means for receiving said elementary stream and generating time stamp information about said elementary stream from said picture order information described in said elementary stream.

2. The encoding system according to claim 1, characterized in that said encoding means describes said picture order information in the picture layer of said elementary stream.

3. The encoding system according to claim 1, characterized in that said picture order information is described as `Picture_order()` in the picture layer of said elementary stream.

4. The encoding system according to claim 1, characterized in that: said picture order information is inserted into the picture layer of said elementary stream; and

said generation means extracts said picture order information from said elementary stream by parsing the syntax of said elementary stream.

5. The encoding system according to claim 1, characterized in that said time stamp information contains presentation time stamps and/or decoding time stamps.

6. The encoding system according to claim 1, characterized in that said generation means comprises means for generating a packetized elementary stream by packetizing said elementary stream and adds said time stamp information to the header of said packetized elementary stream.

7. The encoding system according to claim 1, characterized in that said generation means comprises means for generating a packetized elementary stream by packetizing said elementary stream and uses said time stamp information to add said time stamp information as the header of said packetized elementary stream.

8. The encoding system according to claim 1, characterized in that:
said time stamp information contains presentation time stamps and/or decoding time stamps; and

said generation means generates a packetized elementary stream by packetizing said elementary stream and adds said presentation time stamps and/or decoding time stamps as the header of said packetized elementary stream.

9. The encoding system according to claim 1, characterized in that said picture order information is generated by counting the fields in said input video data.

10. The encoding system according to claim 1, in which said input video data has a 30-Hz frame frequency generated by a 3:2 pull-down process performed on source video data with a 24-Hz frame frequency, further comprising:

counting means for counting the fields in the input video data with said 30-Hz frame frequency; and

2:3 pull-down means, connected between said counting means and said encoding means, for performing the 2:3 pull-down process to convert the input video data with said 30-Hz frame frequency into video data with a 24-Hz frame frequency,

characterized in that said encoding means generates said time stamp information, based on the count information from said counting means.

~~11.~~ An encoding system for encoding input video data, characterized by comprising:

encoding means for encoding said input video data to generate an elementary stream and describing, in said elementary stream, information about the picture order of said elementary stream; and

a packetizer for packetizing said elementary stream, based on said picture order information described in said elementary stream.

12. An encoding system for encoding input video data, characterized by comprising:

encoding means for generating an elementary stream by encoding said input video data in which the information used to generate presentation time stamps has been described in said elementary stream; and

a packetizer for packetizing said elementary stream, based on the information used to generate said presentation time stamps described in said elementary stream.

13. An encoding system for encoding input video data, characterized by comprising:

encoding means for encoding said input video data to generate an elementary stream and describing, in said elementary stream, information about the picture order of said elementary stream; and

a packetizer for packetizing said elementary stream, based on said picture order information described in said elementary stream.

14. An encoding system for encoding input video data, characterized by comprising:

encoding means for generating an elementary stream by encoding said input video data and for multiplexing, in the elementary stream, time stamp information about the decoding and/or presentation of said elementary stream; and

processing means for receiving said elementary stream and for performing stream processing for said elementary stream, based on said time stamp information described in said elementary stream.

15. An encoding system for encoding a plurality of input video data, characterized by comprising:

encoding means for encoding said plurality of input video data to generate a plurality of elementary streams and describing, in each of said elementary streams, time stamp information about the decoding and/or presentation of said elementary streams; and

multiplexing means for receiving said plurality of elementary streams and multiplexing said plurality of elementary streams, based on said time stamp information added in said each elementary stream.

16. An encoding system for encoding input video data, comprising:
an encoder for encoding said input video data to generate an elementary stream; and

a packetizer for generating a packetized elementary stream from said elementary stream,

characterized in that said encoder describes in said elementary stream the information needed to generate the time stamp to be described in the header of said packetized elementary stream.

17. An encoding system for encoding input video data, comprising:

an encoder for encoding said input video data to generate an elementary stream; and

a packetizer for generating a packetized elementary stream from said elementary stream,

characterized in that said encoder transmitting the information used to generate the time stamp to be described in the header of said packetized elementary stream to said packetizer.

18. An encoding method for encoding input video data, characterized by comprising the steps of:

encoding said input video data to generate an elementary stream and describing, in said elementary stream, information about the picture order of said elementary stream; and

packetizing said elementary stream, based on said picture order information described in said elementary stream.

19. An encoding method for encoding input video data, characterized by comprising the steps of:

generating an elementary stream by encoding said input video data wherein the information used to generate presentation time stamps has been described in said elementary stream; and

packetizing said elementary stream, based on the information used to generate said presentation time stamps described in said elementary stream.

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20. An encoding method for encoding input video data, characterized by comprising the steps of:

encoding said input video data to generate an elementary stream and multiplexing, in said elementary stream, time stamp information about the decoding and/or presentation of said elementary stream; and

receiving said elementary stream and performing stream processing for said elementary stream, based on said time stamp information described in said elementary stream.

21. An encoding method for encoding a plurality of input video data, characterized by comprising the steps of:

encoding said plurality of input video data to generate a plurality of elementary streams and describing, in each of said elementary streams, time stamp information about the decoding and/or presentation of said elementary streams; and

receiving said plurality of elementary streams and multiplexing said plurality of elementary streams, based on said time stamp information added in said each elementary stream.

22. An encoding method for encoding input video data, comprising:

an encoding step for encoding said input video data to generate an elementary stream; and

a step for generating a packetized elementary stream from said elementary stream,

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characterized in that said encoding step involves describing in said elementary stream the information needed to generate the time stamp to be described in the header of ~~said packetizer~~ ^{packetized elementary stream}.

23. An encoding method for encoding input video data, characterized by comprising the steps of:

encoding said input video data to generate an elementary stream;
transmitting the information used to generate said elementary stream and time stamps; and

generating a packetized elementary stream from said elementary stream based on the method.

24. An encoding method for encoding a plurality of input video data, characterized by comprising the steps of:

generating a plurality of elementary streams by encoding said plurality of input video data;

describing, in each of said elementary streams, time stamp information about the decoding and/or presentation of said elementary streams; and

receiving said plurality of elementary streams and multiplexing said plurality of elementary streams, based on said time stamp information added in said each elementary stream.

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25. A multiplexing apparatus for multiplexing the plurality of elementary streams generated by encoding a plurality of input video data, characterized by comprising:

means for extracting the time stamp information associated with each of the plurality of elementary streams from said plurality of elementary streams; and

means for multiplexing said plurality of elementary streams, based on said time stamp information extracted from said each elementary stream.

26. A multiplexing method for multiplexing the plurality of elementary streams generated by encoding a plurality of input video data, characterized by comprising the steps of:

extracting the time stamp information associated with each of said plurality of elementary streams from said plurality of elementary streams and

multiplexing said plurality of elementary streams, based on said time stamp information extracted from said each elementary stream.

27. A decoding system for decoding the encoded stream generated by encoding source video data, comprising:

means for extracting the decoding time stamps contained in said encoded stream; and

means for decoding the encoded stream based on said decoding time stamps,

characterized in that said decoding time stamps are information generated based on the number of fields in said source video data.

28. A decoding method for decoding the encoded stream generated by encoding source video data, comprising the steps of:

extracting the decoding time stamps contained in said encoded stream; and

decoding the encoded stream based on said decoding time stamps, characterized in that said decoding time stamps are information generated based on the number of fields in said source video data.

29. A display system for generating decoded video data by decoding the encoded stream generated by encoding source video data and for displaying said decoded video data, comprising:

means for extracting the presentation time stamps contained in said encoded stream;

means for decoding said encoded stream to generate decoded video data; and

means for displaying said decoded video data based on said presentation time stamps,

characterized in that said presentation time stamps are information generated based on the number of fields in said source video data.

30. A display method for generating decoded video data by decoding the encoded stream generated by encoding source video data and for displaying said decoded video data, comprising the steps of:

extracting the presentation time stamps contained in said encoded stream;

decoding said encoded stream to generate decoded video data; and

displaying said decoded video data based on said presentation time stamps,

characterized in that said presentation time stamps contained in said encoded stream are information generated based on the number of fields in said source video data.

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